

STATE OF NEW HAMPSHIRE

INTER-DEPARTMENT COMMUNICATION

FROM:  Matt Urban
Wetlands Program Manager

DATE: July 23, 2018

AT (OFFICE): Department of
Transportation

SUBJECT: Dredge & Fill Application
Canaan, 40493

Bureau of
Environment

TO: Gino Infascelli, Public Works Permitting Officer
New Hampshire Wetlands Bureau
29 Hazen Drive, P.O. Box 95
Concord, NH 03302-0095

Forwarded herewith is the application package prepared by NH DOT Bureau of Bridge Maintenance for the subject Major impact project. This project is classified as Major per Env-Wt 303.02(p). The project is located on NH Route 118 in the Town of Canaan, NH. The proposed work consists of replacing the concrete deck and substructure by widening/extending the bridge 2' to the west and 5' to the east and installing rip-rap for scour protection.

This project was reviewed at the Natural Resource Agency Coordination Meeting on May 19th 2015. A copy of the minutes has been included with this application package. A copy of this application and plans can be accessed on the Departments website via the following link:
<http://www.nh.gov/dot/org/projectdevelopment/environment/units/program-management/wetland-applications.htm>

Mitigation for this project will consist of a single and one time in-lieu fee payment into the Arm-Fund in the amount of \$1,733.76

A payment voucher has been processed for this application (Voucher #536905) in the amount of \$790.40.

The lead people to contact for this project are Steve Johnson, Assistant Administrator, Bureau of Bridge Maintenance (271-3668 or steve.johnson@dot.nh.gov) or Matt Urban, Wetlands Program Manager, Bureau of Environment (271-3226 or matt.urban@dot.nh.gov).

If and when this application meets with the approval of the Bureau, please send the permit directly to Matt Urban, Wetlands Program Manager, Bureau of Environment.

MRU:mru
Enclosures

cc:
BOE Original
Town of Canaan (4 copies via certified mail)
David Trubey, NH Division of Historic Resources (Cultural Review Within)
Carol Henderson, NH Fish & Game (via electronic notification)
Maria Tur, US Fish & Wildlife (via electronic notification)
Mark Kern, US Environmental Protection Agency (via electronic notification)
Michael Hicks, US Army Corp of Engineers (via electronic notification)
Kevin Nyhan, BOE (via electronic notification)



WETLANDS PERMIT APPLICATION

Water Division/ Wetlands Bureau Land Resources Management

Check the status of your application: www.des.nh.gov/onestop

RSA/Rule: RSA 482-A/ Env-Wt 100-900



Administrative Use Only	Administrative Use Only	Administrative Use Only	File No.:
			Check No.:
			Amount:
			Initials:

1. REVIEW TIME: Indicate your Review Time below. To determine review time, refer to Guidance Document A for instructions.

☒ Standard Review (Minimum, Minor or Major Impact)

☐ Expedited Review (Minimum Impact only)

2. MITIGATION REQUIREMENT:

If mitigation is required a Mitigation-Pre Application meeting must occur prior to submitting this Wetlands Permit Application. To determine if Mitigation is Required, please refer to the Determine if Mitigation is Required Frequently Asked Question.

Mitigation Pre-Application Meeting Date: Month: 8 Day: 19 Year: 2015

☐ N/A - Mitigation is not required

3. PROJECT LOCATION:

Separate wetland permit applications must be submitted for each municipality that wetland impacts occur within.

ADDRESS: **NH 118 over Indian River**

TOWN/CITY: **Canaan**

TAX MAP:

BLOCK:

LOT:

UNIT:

USGS TOPO MAP WATERBODY NAME: **Indian River**

☐ NA

STREAM WATERSHED SIZE: **16.17**

☐ NA

LOCATION COORDINATES (If known): **043°40'44.1", 071°59'47.1"**

☒ Latitude/Longitude

4. PROJECT DESCRIPTION:

Provide a brief description of the project outlining the scope of work. Attach additional sheets as needed to provide a detailed explanation of your project. DO NOT reply "See Attached" in the space provided below.

The existing bridge carrying NH 118 over Indian River(177/123) is a concrete rigid frame spanning 35'. The proposed project includes replacing the concrete deck and substructure widening 2'-2 to the west and 4'-8 to the east, and installing riprap.

5. SHORELINE FRONTAGE:

☒ NA This does not have shoreline frontage.

SHORELINE FRONTAGE:

Shoreline frontage is calculated by determining the average of the distances of the actual natural navigable shoreline frontage and a straight line drawn between the property lines, both of which are measured at the normal high water line.

6. RELATED NHDES LAND RESOURCES MANAGEMENT PERMIT APPLICATIONS ASSOCIATED WITH THIS PROJECT:

Please indicate if any of the following permit applications are required and, if required, the status of the application.

To determine if other Land Resources Management Permits are required, refer to the Land Resources Management Web Page.

Permit Type	Permit Required	File Number	Permit Application Status
Alteration of Terrain Permit Per RSA 485-A:17	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	_____	<input type="checkbox"/> APPROVED <input type="checkbox"/> PENDING <input type="checkbox"/> DENIED
Individual Sewerage Disposal per RSA 485-A:2	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	_____	<input type="checkbox"/> APPROVED <input type="checkbox"/> PENDING <input type="checkbox"/> DENIED
Subdivision Approval Per RSA 485-A	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	_____	<input type="checkbox"/> APPROVED <input type="checkbox"/> PENDING <input type="checkbox"/> DENIED
Shoreland Permit Per RSA 483-B	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	_____	<input type="checkbox"/> APPROVED <input type="checkbox"/> PENDING <input type="checkbox"/> DENIED

7. NATURAL HERITAGE BUREAU & DESIGNATED RIVERS:

See the Instructions & Required Attachments document for instructions to complete a & b below.

a. Natural Heritage Bureau File ID: NHB **18** - **0932**

b. ☐ Designated River the project is in ¼ miles of: _____; and
date a copy of the application was sent to the Local River Management Advisory Committee: Month: ____ Day: ____ Year: ____

☒ N/A

shoreland@des.nh.gov or (603) 271-2147

NHDES Wetlands Bureau, 29 Hazen Drive, PO Box 95, Concord, NH 03302-0095

www.des.nh.gov

8. APPLICANT INFORMATION (Desired permit holder)LAST NAME, FIRST NAME, M.I.: **Johnson, Steve W**TRUST / COMPANY NAME: **NH Department of Transportation**MAILING ADDRESS: **7 Hazen Drive**TOWN/CITY: **Concord**STATE: **NH**ZIP CODE: **03302**EMAIL or FAX: **sjohnson@dot.state.nh.us**PHONE: **603-271-3667**ELECTRONIC COMMUNICATION: By initialing here: *SW*, I hereby authorize NHDES to communicate all matters relative to this application electronically**9. PROPERTY OWNER INFORMATION (If different than applicant)**LAST NAME, FIRST NAME, M.I.: **N/A**

TRUST / COMPANY NAME:

MAILING ADDRESS:

TOWN/CITY:

STATE:

ZIP CODE:

EMAIL or FAX:

PHONE:

ELECTRONIC COMMUNICATION: By initialing here _____, I hereby authorize NHDES to communicate all matters relative to this application electronically

10. AUTHORIZED AGENT INFORMATION

LAST NAME, FIRST NAME, M.I.:

COMPANY NAME:

MAILING ADDRESS:

TOWN/CITY:

STATE:

ZIP CODE:

EMAIL or FAX:

PHONE:

ELECTRONIC COMMUNICATION: By initialing here _____, I hereby authorize NHDES to communicate all matters relative to this application electronically

11. PROPERTY OWNER SIGNATURE:

See the Instructions & Required Attachments document for clarification of the below statements

By signing the application, I am certifying that:

1. I authorize the applicant and/or agent indicated on this form to act in my behalf in the processing of this application, and to furnish upon request, supplemental information in support of this permit application.
2. I have reviewed and submitted information & attachments outlined in the Instructions and Required Attachment document.
3. All abutters have been identified in accordance with RSA 482-A:3, I and Env-Wt 100-900.
4. I have read and provided the required information outlined in Env-Wt 302.04 for the applicable project type.
5. I have read and understand Env-Wt 302.03 and have chosen the least impacting alternative.
6. Any structure that I am proposing to repair/replace was either previously permitted by the Wetlands Bureau or would be considered grandfathered per Env-Wt 101.47.
7. I have submitted a Request for Project Review (RPR) Form (www.nh.gov/nhdhr/review) to the NH State Historic Preservation Officer (SHPO) at the NH Division of Historical Resources to identify the presence of historical/ archeological resources while coordinating with the lead federal agency for NHPA 106 compliance.
8. I authorize NHDES and the municipal conservation commission to inspect the site of the proposed project.
9. I have reviewed the information being submitted and that to the best of my knowledge the information is true and accurate.
10. I understand that the willful submission of falsified or misrepresented information to the New Hampshire Department of Environmental Services is a criminal act, which may result in legal action.
11. I am aware that the work I am proposing may require additional state, local or federal permits which I am responsible for obtaining.
12. The mailing addresses I have provided are up to date and appropriate for receipt of NHDES correspondence. NHDES will not forward returned mail.



Property Owner Signature

Steve W Johnson

Print name legibly

6/27/2018

Date

MUNICIPAL SIGNATURES

12. CONSERVATION COMMISSION SIGNATURE

The signature below certifies that the municipal conservation commission has reviewed this application, and:

1. Waives its right to intervene per RSA 482-A:11;
2. Believes that the application and submitted plans accurately represent the proposed project; and
3. Has no objection to permitting the proposed work.

	Print name legibly	Date
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DIRECTIONS FOR CONSERVATION COMMISSION

1. Expedited review ONLY requires that the conservation commission's signature is obtained in the space above.
2. Expedited review requires the Conservation Commission signature be obtained **prior** to the submittal of the original application to the Town/City Clerk for signature.
3. The Conservation Commission may refuse to sign. If the Conservation Commission does not sign this statement for any reason, the application is not eligible for expedited review and the application will reviewed in the standard review time frame.

13. TOWN / CITY CLERK SIGNATURE

As required by Chapter 482-A:3 (amended 2014), I hereby certify that the applicant has filed four application forms, four detailed plans, and four USGS location maps with the town/city indicated below.

	Print name legibly	Town/City	Date
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DIRECTIONS FOR TOWN/CITY CLERK:

Per RSA 482-A:3,I

1. For applications where "Expedited Review" is checked on page 1, if the Conservation Commission signature is not present, NHDES will accept the permit application, but it will NOT receive the expedited review time.
2. IMMEDIATELY sign the original application form and four copies in the signature space provided above;
3. Return the signed original application form and attachments to the applicant so that the applicant may submit the application form and attachments to NHDES by mail or hand delivery.
4. IMMEDIATELY distribute a copy of the application with one complete set of attachments to each of the following bodies: the municipal Conservation Commission, the local governing body (Board of Selectmen or Town/City Council), and the Planning Board; and
5. Retain one copy of the application form and one complete set of attachments and make them reasonably accessible for public review.

DIRECTIONS FOR APPLICANT:

1. Submit the single, original permit application form bearing the signature of the Town/ City Clerk, additional materials, and the application fee to NHDES by mail or hand delivery.

14. IMPACT AREA:

For each jurisdictional area that will be/has been impacted, provide square feet and, if applicable, linear feet of impact

Permanent: impacts that will remain after the project is complete.Temporary: impacts not intended to remain (and will be restored to pre-construction conditions) after the project is complete.

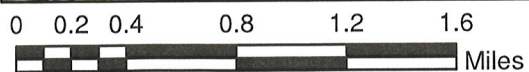
JURISDICTIONAL AREA	PERMANENT Sq. Ft. / Lin. Ft.	TEMPORARY Sq. Ft. / Lin. Ft.
Forested wetland	<input type="checkbox"/> ATF	<input type="checkbox"/> ATF
Scrub-shrub wetland	<input type="checkbox"/> ATF	<input type="checkbox"/> ATF
Emergent wetland	<input type="checkbox"/> ATF	<input type="checkbox"/> ATF
Wet meadow	<input type="checkbox"/> ATF	<input type="checkbox"/> ATF
Intermittent stream	<input type="checkbox"/> ATF	<input type="checkbox"/> ATF
Perennial Stream / River	953 / 144 <input type="checkbox"/> ATF	2716 / 113 <input type="checkbox"/> ATF
Lake / Pond	/ <input type="checkbox"/> ATF	/ <input type="checkbox"/> ATF
Bank - Intermittent stream	/ <input type="checkbox"/> ATF	/ <input type="checkbox"/> ATF
Bank - Perennial stream / River	89 / 34 <input type="checkbox"/> ATF	194 / 76 <input type="checkbox"/> ATF
Bank - Lake / Pond	/ <input type="checkbox"/> ATF	/ <input type="checkbox"/> ATF
Tidal water	/ <input type="checkbox"/> ATF	/ <input type="checkbox"/> ATF
Salt marsh	<input type="checkbox"/> ATF	<input type="checkbox"/> ATF
Sand dune	<input type="checkbox"/> ATF	<input type="checkbox"/> ATF
Prime wetland	<input type="checkbox"/> ATF	<input type="checkbox"/> ATF
Prime wetland buffer	<input type="checkbox"/> ATF	<input type="checkbox"/> ATF
Undeveloped Tidal Buffer Zone (TBZ)	<input type="checkbox"/> ATF	<input type="checkbox"/> ATF
Previously-developed upland in TBZ	<input type="checkbox"/> ATF	<input type="checkbox"/> ATF
Docking - Lake / Pond	<input type="checkbox"/> ATF	<input type="checkbox"/> ATF
Docking - River	<input type="checkbox"/> ATF	<input type="checkbox"/> ATF
Docking - Tidal Water	<input type="checkbox"/> ATF	<input type="checkbox"/> ATF
TOTAL	1042 / 178	2910 / 189

15. APPLICATION FEE: See the Instructions & Required Attachments document for further instruction☐ Minimum Impact Fee: Flat fee of \$ 200☒ Minor or Major Impact Fee: Calculate using the below table belowPermanent and Temporary (non-docking) 3952 sq. ft. X \$0.20 = \$ 790.40Temporary (seasonal) docking structure: sq. ft. X \$1.00 = \$Permanent docking structure: sq. ft. X \$2.00 = \$Projects proposing shoreline structures (including docks) add \$200 = \$Total = \$ 790.40The Application Fee is the above calculated Total or \$200, whichever is greater = \$ 790.40

shoreland@des.nh.gov or (603) 271-2147

NHDES Wetlands Bureau, 29 Hazen Drive, PO Box 95, Concord, NH 03302-0095

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SCALE 1:24,000

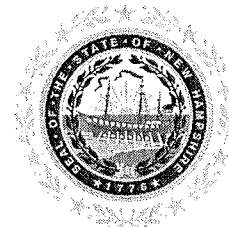


WETLANDS PERMIT APPLICATION – ATTACHMENT A MINOR AND MAJOR - 20 QUESTIONS

Land Resources Management

Wetlands Bureau

Check the Status of your application: www.des.nh.gov/onestop



RSA/ Rule: RSA 482-A, Env-Wt 100-900

Env-Wt 302.04 Requirements for Application Evaluation - For any major or minor project, the applicant shall demonstrate by plan and example that the following factors have been considered in the project's design in assessing the impact of the proposed project to areas and environments under the department's jurisdiction. Respond with statements demonstrating:

1. The need for the proposed impact.

The underside of the bridge deck is spalling exposing reinforcing and has heavy staining. The bridge abutments have cracks and concrete spalls. It is necessary to impact jurisdictional areas to provide for the repairs to access the bridge. The existing structure is narrow, only providing 27.9' total, so widening by 6'-10' is necessary to maintain traffic during construction which will benefit travelers as well as improve constructability. The final bridge will better match the roadway approaches connected to it. The impacts are for the construction of the abutment extension and wingwalls, riprap, and temporary construction areas for replacement of the existing deck. If the structure is not rehabilitated, it will eventually be load posted or closed.

2. That the alternative proposed by the applicant is the one with the least impact to wetlands or surface waters on site.

The alternatives considered are as follows:

Replace structure with a new structure in compliance with the NH Stream Crossing Guidelines: According to the NH Stream Crossing Guidelines, if a new structure were to be constructed at this location it would require a span of 60'-0". A structure of this size would cost approximately \$1,000,000. Spending this much money on a structure that could be adequately preserved for approximately \$250,000 would not be a practicable use of resources.

Replace existing concrete deck and widen substructure: This is the proposed alternative. The structure can be preserved by removing the concrete deck and replacing it. The proposed structure will also have minimal impacts due to the small worksite area and footprint required. The project as proposed has an estimated cost of \$200,000. This is the most cost effective solution while minimizing existing wetland impacts.

In the August 19th 2015 Natural Resource Agency Coordination Meeting no concerns with this project were raised.

3. The type and classification of the wetlands involved.

**R2UB12: Riverine, lower perennial, unconsolidated bottom, cobble gravel, sand
Bank**

4. The relationship of the proposed wetlands to be impacted relative to nearby wetlands and surface waters.

Indian River flows into the Masacoma River about 5.5 miles downstream.

5. The rarity of the wetland, surface water, sand dunes, or tidal buffer zone area.

Indian River has not been identified as a rare surface water of the state.

6. The surface area of the wetlands that will be impacted.

3669 sq. ft. Riverine (2716 sq. ft. temporary, 953 sq. ft. permanent)

283 sq. ft. Bank (194 sq. ft. temporary, 89 sq. ft. permanent)

7. The impact on plants, fish and wildlife including, but not limited to:
- a. Rare, special concern species;
 - b. State and federally listed threatened and endangered species;
 - c. Species at the extremities of their ranges;
 - d. Migratory fish and wildlife;
 - e. Exemplary natural communities identified by the DRED-NHB; and
 - f. Vernal pools.

a) There were no rare or special concern species identified other than those listed below.

b) Through U.S. Fish and Wildlife Service IPaC (05E1NE00-2018-SLI-1368) the threatened Northern Long-eared Bat was listed as a "Threatened" species. The proposed work will not remove any trees greater than 3" in diameter at breast height. The Department has coordinated with DRED and the results of the NHB review revealed no records for state or federally listed threatened or endangered species.

c) There are no species known to be at the extremities of their ranges located in the project area.

d) Migratory fish will not be affected due to this project. During construction, streamflow will be maintained through a portion of the natural channel unimpeded. Migratory wildlife will not be affected as a result of this project.

e) The Department has coordinated with DRED and results of the NHB review revealed no records for state or federally listed threatened or endangered species in this area.

f) There were no vernal pools identified within the project limits

8. The impact of the proposed project on public commerce, navigation and recreation.

The proposed project will use phased construction to maintain one lane traffic along NH 118. There are no recreational areas that have been identified in this area except for the possibility of fishing. Indian River is a non-navigable water which makes it non-conductive to boaters. During construction fishing activities from the banks of the waterbody will need to occur outside of the construction work zone. When construction has completed, the proposed project will benefit the public commerce.

9. The extent to which a project interferes with the aesthetic interests of the general public. For example, where an applicant proposes the construction of a retaining wall on the bank of a lake, the applicant shall be required to indicate the type of material to be used and the effect of the construction of the wall on the view of other users of the lake.

The proposed project will not significantly interfere with the aesthetic interests of the general public. The proposed improvements will either be regarded as more pleasing to the eye than the existing structure, or it will go unnoticed.

10. The extent to which a project interferes with or obstructs public rights of passage or access. For example, where the applicant proposes to construct a dock in a narrow channel, the applicant shall be required to document the extent to which the dock would block or interfere with the passage through this area.

The project will not interfere with or obstruct rights of passage or access. During construction, traffic will be maintained at all times. Upon completion of the proposed project the road will be returned to full lane width.

11. The impact upon abutting owners pursuant to RSA 482-A:11, II. For example, if an applicant is proposing to rip-rap a stream, the applicant shall be required to document the effect of such work on upstream and downstream abutting properties.

The project is expected to have a positive impact on abutting properties. The rehabilitated structure will better serve the abutting properties if they need to travel on the road, and the project will not alter the chance of flooding on abutting properties.

12. The benefit of a project to the health, safety, and well being of the general public.

The project will provide a safer, longer lasting structure and roadway. If the structure is not rehabilitated, the bridge will eventually be load posted or closed. Keeping the roadway open benefits commerce, trade, emergency access, etc., for the general public.

13. The impact of a proposed project on quantity or quality of surface and groundwater. For example, where an applicant proposes to fill wetlands the applicant shall be required to document the impact of the proposed fill on the amount of drainage entering the site versus the amount of drainage exiting the site and the difference in the quality of water entering and exiting the site.

The surface water currently runs off the road, over natural vegetation along the edge of the road and banks of the water body, and/or off the headwalls and wingwalls into the waterbody. Upon completion of the project, surface water will drain in the same manner. The proposed work will not change the quality or quantity of surface and groundwater within the project limits. Best Management Practices will be used to prevent any adverse effects on water quality during construction.

14. The potential of a proposed project to cause or increase flooding, erosion, or sedimentation.

Flooding: Replacing the concrete deck and widening the wingwalls will not have an effect on the bridges ability to pass the 100 year storm event.

Erosion: Placing riprap and widening the structure will have no effect on erosion. The stone is to prevent erosion along the inlet and outlet.

Sedimentation: Nothing that will be a barrier to sediment transport will be installed in this project. The bridge will continue to pass and transport sediment as it does currently. Velocities through the structure will remain the same.

15. The extent to which a project that is located in surface waters reflects or redirects current or wave energy which might cause damage or hazards.

Surface waters will not be reflected or redirected as a result of this project. Indian River does not have enough surface area for wave energy to be an issue.

16. The cumulative impact that would result if all parties owning or abutting a portion of the affected wetland or wetland complex were also permitted alterations to the wetland proportional to the extent of their property rights. For example, an applicant who owns only a portion of a wetland shall document the applicant's percentage of ownership of that wetland and the percentage of that ownership that would be impacted.

The work consists of the repair of an existing bridge structure. There are no similar structures in the vicinity owned by other parties that would require repair.

17. The impact of the proposed project on the values and functions of the total wetland or wetland complex.

The value of the wetland as a habitat for living organisms will not be changed as a result of this project. A function of Indian River is to carry water from a higher elevation to a lower elevation. This project will not interfere with that function.

18. The impact upon the value of the sites included in the latest published edition of the National Register of Natural Landmarks, or sites eligible for such publication.

The project is not located in or near any Natural Landmarks listed on the National Register.

19. The impact upon the value of areas named in acts of Congress or presidential proclamations as national rivers, national wilderness areas, national lakeshores, and such areas as may be established under federal, state, or municipal laws for similar and related purposes such as estuarine and marine sanctuaries.

There are no areas named in an act of Congress or Presidential proclamations as national rivers, national wilderness areas, or national lakeshores that will be impacted as a result of this project.

20. The degree to which a project redirects water from one watershed to another.

This project as proposed will not redirect water from one watershed to another.

Additional comments

NOTES ON CONFERENCE:**Finalization of May 20th Meeting Minutes**

The meeting minutes were finalized. No comments were received.

Andover, 40486, Non-Federal

Tony Weatherbee provided an overview of the project. The scope of the project is to rehab the bridge that carries NH Rte. 11 over Pleasant Stream (044/088). The existing structure is a two span IB-C bridge that has a 49'-0" max span, 104' total length and 42'-6" deck width. Proposed work consists of repairing the undermined pier with a concrete toewall and installing riprap. There are locations where the pier is scoured 3' to 4'. The pier will be accessed from the north side of the structure where the streambed is naturally higher. There will be no permanent access required to access the pier.

Jocelyn Degler noted that Andover has Prime Wetlands and that this project may be located within the 100' buffer. She said that it should be noted on the plan.

Mike Hicks asked if any trees larger than 3" in diameter were going to be cut down. T. Weatherbee said that there may be a few around 3" in diameter. M. Hicks said that the presence of bats in the area will then have to be investigated. He said the clearing for bats is April to August 31. M. Hicks asked if there were any historic issues and T. Weatherbee said no.

Carol Henderson asked if riprap will be placed all around the pier and T. Weatherbee said yes. C. Henderson asked we had considered partially grouted riprap. Matt Urban said that there were issues with pH the last time PGR was used. C. Henderson asked what time of the year this project would take place and T. Weatherbee said summer of 2016.

Lori Sommer said that no mitigation would be required.

This project has not been previously discussed at a Monthly Natural Resource Agency Coordination Meeting.

Canaan, 40493, Non-Federal

Tony Weatherbee provided an overview of the project. The scope of the project is to rehab the existing concrete rigid frame bridge that carries NH Route 118 over the Indian River. The existing structure is a concrete ridged frame bridge that has a 32'-0" clear span and 27'-11" deck width. Proposed work consists of replacing the concrete deck, widening the existing substructure and installing riprap. The centerline joint is leaking and it has caused the concrete to degrade. This location cannot be replaced while traffic is being maintained, so the bridge deck will have to be widened and replaced in two phases.

Lori Sommer asked if there was currently riprap in the north east area and T. Weatherbee said no. T. Weatherbee said that riprap would be added 5' in front of the existing and proposed substructure.

L. Sommer and Jocelyn Degler said that mitigation is required for the proposed portions of substructure on the eastern side and will not be required for the existing substructure.

Carol Henderson asked when the project would be done and T. Weatherbee said that the substructure will be done at the end of Fall in 2016 and then the superstructure will be completed that winter.

Mitigation Summary Narrative

Canaan 40493

The proposed project consists of replacing the concrete deck and substructure and widening/extending it by 2' to the west and 5' to the east, and installing rip-rap. At the May 19th 2015 Natural Resource Agency Coordination Meeting, mitigation was discussed and it was determined that mitigation would be required for the structure extensions that consisted of 2' to the west and 5 feet to the east. As such, the Department is proposing a single and one-time in-lieu fee payment into the ARM-Fund in the amount of \$1,733.76.

**NHDES AQUATIC RESOURCE MITIGATION FUND
STREAM PAYMENT CALCULATION**

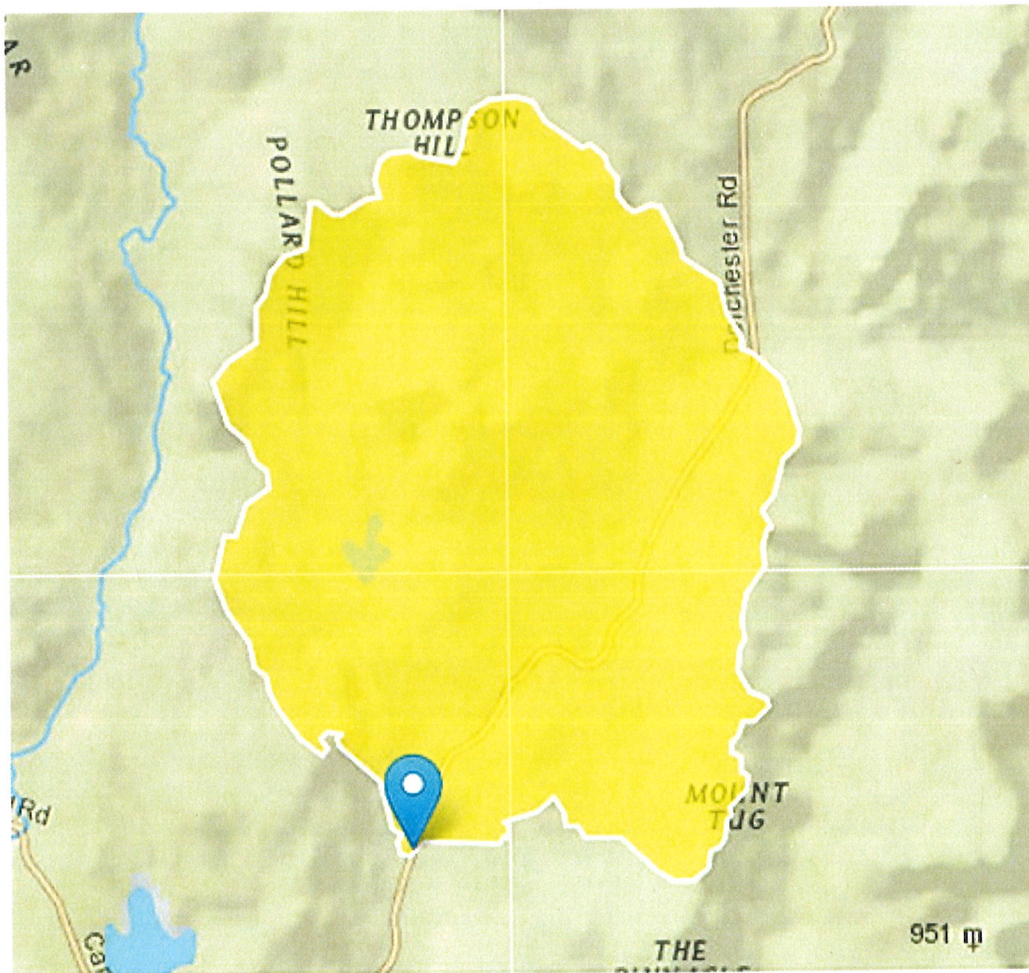
INSERT LINEAR FEET OF IMPACT on BOTH BANKS AND CHANNEL	Right Bank	
	Left Bank	
	Channel	7.0000
	TOTAL IMPACT	7.0000
	Stream Impact Cost:	\$1,444.80
	NHDES Administrative cost:	
		\$288.96
***** TOTAL ARM FUND STREAM PAYMENT*****		
		\$1,733.76

Hydraulic Data

Drainage Area – 16.17 square miles

Flow – Q 100 = 1870 cfs

The proposed structure will pass the 100 year flood.



Watershed Boundaries Map

**NH Department of Transportation
Bureau of Bridge Maintenance
Project, # 40493
Env-Wt 904.09 Alternative Design
TECHNICAL REPORT**

Env-Wt 904.09(a) - If the applicant believes that installing the structure specified in the applicable rule is not practicable, the applicant may propose an alternative design in accordance with this section.

Please explain why the structure specified in the applicable rule is not practicable (Env-Wt 101.69 defines practicable as *available and capable of being done after taking into consideration costs, existing technology, and logistics in light of overall project purposes.*)

At this location Indian River has a drainage area of 16.1 square miles which qualifies this stream as a Tier 3 Crossing. The required span based on the NH Stream Crossing Guidelines for a new crossing is 60'-0". A structure of this size would cost approximately \$1,300,000. Spending this much money on a structure that could be adequately preserved for approximately \$250,000 would not be a practicable use of resources.

The proposed alternative meets the specific design criteria for Tier 2 and Tier 3 crossings to the maximum extent practicable, as specified below.

Env-Wt 904.05 Design Criteria for Tier 2 and Tier 3 Stream Crossings – New Tier 2 stream crossings, replacement Tier 2 crossings that do not meet the requirements of Env-Wt 904.07, and new and replacement Tier 3 crossings shall be designed and constructed:

(a) In accordance with the NH Stream Crossing Guidelines.

The NH Stream Crossing Rules do not mention maintenance to a structure in a Tier 3 watershed; however, the proposed work has been designed to meet the minimum design criteria outlined in Env-Wt 904.05 (see 2b through 2g) to the maximum extent practicable. The Department has designed the maintenance work to support aquatic organism passage and stream connectivity, but it is impracticable to replace the crossing with a structure that is of a fully compliant size at this time due to constraints of maintenance work.

(b) With bed forms and streambed characteristics necessary to cause water depths and velocities within the crossing structure at a variety of flows to be comparable to those found in the natural channel upstream and downstream of the stream crossing.

Water depths and velocities within the crossing at a variety of flows will be comparable to the existing depths and velocities. These flows are comparable to those found in the natural channel upstream and downstream of the stream crossing.

(c) To provide a vegetated bank on both sides of the watercourse to allow for wildlife passage.

It is not possible to provide vegetated banks below the structure as the structure does not span the water course's banks. Upsizing the crossing is not within the scope of this project. It is not possible to vegetate with shrubs/woody vegetation on the banks immediately in front of critical sections of infrastructure,

such as wingwalls, because over time as large vegetation grows in and around riprap their roots and the possibility of tree falls can threaten the integrity of the riprap.

(d) To preserve the natural alignment and gradient of the stream channel, so as to accommodate natural flow regimes and the functioning of the natural floodplain.

The natural alignment and gradient of the stream channel will not be changed as a result of this project.

(e) To accommodate the 100-year frequency flood, to ensure that (1) there is no increase in flood stages on abutting properties; and (2) flow and sediment transport characteristics will not be affected in a manner which could adversely affect channel stability.

(1) The project as proposed will not alter the chance of flooding on abutting properties. The existing and proposed repairs to the structure will continue to pass the Q100.

(2) Sediment characteristics will not change as a result of the repairs.

(f) To simulate a natural stream channel.

The majority of the stream channel under the structure is currently a natural bottom. The riprap added here is only to improve upon the armoring of the substructure and will not be placed throughout the structure.

(g) So as not to alter sediment transport competence.

Sediment transport competence will not be changed as a result of this project.

Env-Wt 904.09(c)(3) – The alternative design must meet the general design criteria specified in Env-Wt 904.01:

Env-Wt 904.01

(a) Not be a barrier to sediment transport;

Nothing that will be a barrier to sediment transport will be installed in this project.

(b) Prevent the restriction of high flows and maintain existing low flows;

High flows will not be restricted and low flows will be maintained as a result of this project. The project as proposed will not have any effect on the structures ability to pass the 100 year storm event.

(c) Not obstruct or otherwise substantially disrupt the movement of aquatic life indigenous to the waterbody beyond the actual duration of construction;

The movement of aquatic life indigenous to the water body will not change as a result of this project.

(d) Not cause an increase in the frequency of flooding or overtopping of banks;

The project as proposed will have no effect on the hydraulic capacity of the structure. High flows will not be restricted. The frequency of flooding or water overtopping the roadway or banks at the structure will not change due to the proposed work.

(e) Preserve watercourse connectivity where it currently exists;

Connectivity will not be changed as a result of this project.

(f) Restore watercourse connectivity where: (1) Connectivity previously was disrupted as a result of human activity(ies); and (2) Restoration of connectivity will benefit aquatic life upstream or downstream of the crossing, or both;

The watercourse is currently connected and the proposed work will not change this as a result of this project. Aquatic life passage upstream or downstream of the crossing will not be affected as a result of this project.

(g) Not cause erosion, aggradation, or scouring upstream or downstream of the crossing; and

The project will not cause erosion, aggradation, or scouring upstream or downstream of the crossing. The placed riprap along the banks is intended to prevent scour along the banks of the water body and at the wingwall to prevent excessive sediment transport and erosion in the future.

(h) Not cause water quality degradation.

The project as proposed will not impact the quantity or quality of surface and/or groundwater at this site. Storm water and surface water runoff will continue to sheet flow to the water body off the road and banks the way it does currently. Best Management Practices will be used to prevent any adverse effect to the water quality during construction.

*****Note: An alternative design for Tier 1 stream crossings must meet the general design criteria (Env-Wt 904.01) only to the *maximum extent practicable*.**



New Hampshire Natural Heritage Bureau

To: Douglas Locker
7 Hazen Drive
Concord, NH 03302

Date: 3/22/2018

From: NH Natural Heritage Bureau

Re: Review by NH Natural Heritage Bureau of request dated 3/22/2018
NHB File ID: NHB18-0932

Applicant: Doug Gosling

Location: Tax Map(s)/Lot(s):
Canaan

Project Description: The proposed project will include replacing the deck,
widening the substructure, and placing riprap

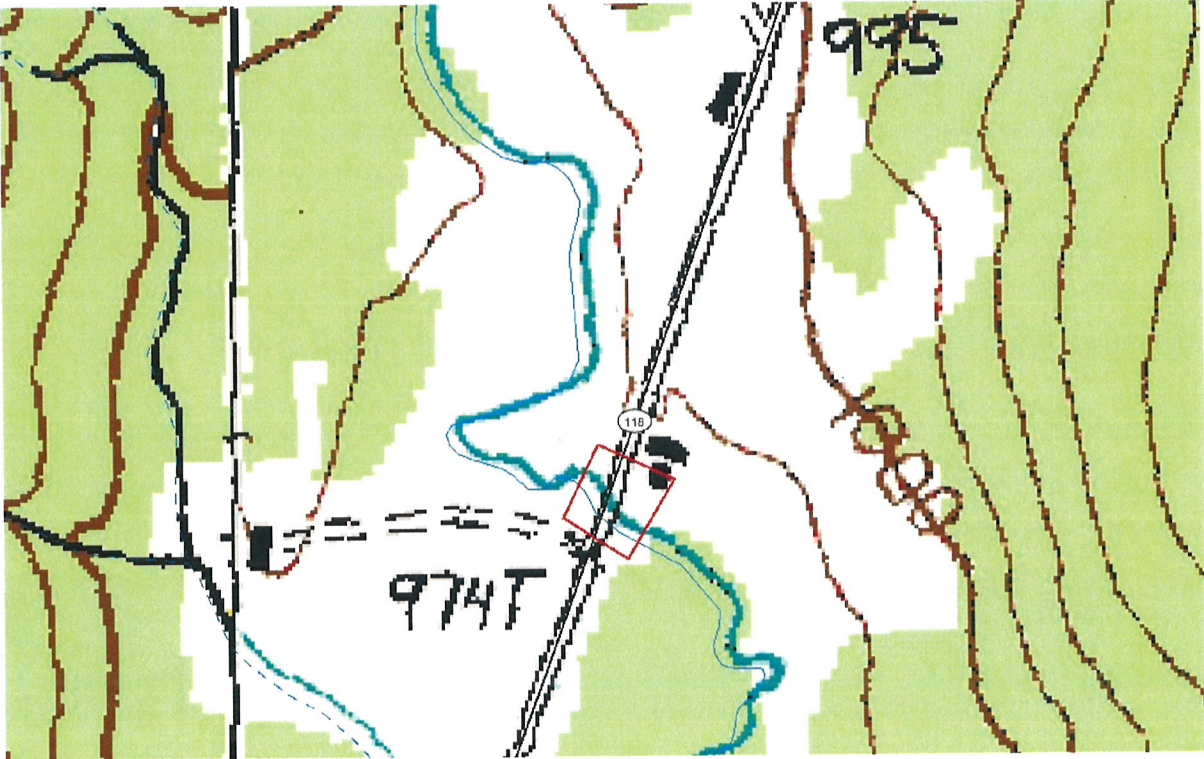
The NH Natural Heritage database has been checked for records of rare species and exemplary natural communities near the area mapped below. The species considered include those listed as Threatened or Endangered by either the state of New Hampshire or the federal government. We currently have no recorded occurrences for sensitive species near this project area.

A negative result (no record in our database) does not mean that a sensitive species is not present. Our data can only tell you of known occurrences, based on information gathered by qualified biologists and reported to our office. However, many areas have never been surveyed, or have only been surveyed for certain species. An on-site survey would provide better information on what species and communities are indeed present.

This report is valid through 3/21/2019.



MAP OF PROJECT BOUNDARIES FOR NHB FILE ID: NHB18-0932





United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104
<http://www.fws.gov/newengland>



In Reply Refer To:

March 23, 2018

Consultation Code: 05E1NE00-2018-SLI-1368

Event Code: 05E1NE00-2018-E-03123

Project Name: Canaan 177/123

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New England Ecological Services Field Office

70 Commercial Street, Suite 300

Concord, NH 03301-5094

(603) 223-2541

Project Summary

Consultation Code: 05E1NE00-2018-SLI-1368

Event Code: 05E1NE00-2018-E-03123

Project Name: Canaan 177/123

Project Type: BRIDGE CONSTRUCTION / MAINTENANCE

Project Description: NH 118 over Indian River

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/43.6789897960033N71.99635760008408W>



Counties: Grafton, NH

Endangered Species Act Species

There is a total of 1 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Wetland Application – NHDOT Cultural Resources Review

For the purpose of compliance with regulations of the National Historic Preservation Act, the Advisory Council on Historic Preservation's *Procedures for the Protection of Historic Properties* (36 CFR 800), the US Army Corps of Engineers' *Appendix C*, and/or state regulation RSA 227-C:9, *Directive for Cooperation in the Protection of Historic Resources*, the NHDOT Cultural Resources Program has reviewed the enclosed Standard Dredge and Fill Application for potential impacts to historic properties.

Proposed Project: Rehabilitation of bridge that carries Rt 118 over Indian River (Bridge 177/123) includes replacing the concrete deck, widening the existing substructure (by widening the east abutment), constructed new wingwalls and , and installing riprap in front of abutments and wingwalls (placement of stone fill will fall within areas under the jurisdiction of NH Wetland Bureau and US ACOE). Temporary staging will be placed in brook.
Condition – Underside of bridge deck spalling with exposed reinforcing and staining, abutments have cracks and concrete spalls; bridge and approaches are narrow; impacts required for construction of abutment extension, to repair wingwalls, lay riprap, and temporary construction areas for replacing deck

Above Ground Review

Known/approximate age of structure:

Bridge that carries Rt 118 over Indian River (Bridge 177/123) is a concrete rigid frame built in 1948
 Rehabilitation is proposed, including replace concrete deck, widen structure, install riprap
 1 span, 35 ft long, 27.9 ft wide with reinforced concrete abutments, single nested metal W-rail

☒ No Potential to Cause Effect/No Concerns

The project does not fall under the Section 106 Program Comment for Common Post-1945 Concrete & Steel Bridges, however the standard design and construction of a common bridge type does not warrant further review.

☐ Concerns:

Below Ground Review

Recorded Archaeological site: ☐ Yes ☒ No

Nearest Recorded Archaeological Site Name & Number:

☒ Pre-Contact ☐ Post-Contact Indian River Mouth 27-GR-0171

Distance from Project Area: 3.84 miles (6.2 km) southwest of project area

☐ Pre-Contact ☒ Post-Contact L. Smith Place (1892) 27-GR—0046

Distance from Project Area: 5.884 miles (9.47 km) northeast of project area

☒ No Potential to Cause Effect/No Concerns

Widening and areas to be impacted appear to lie within previously disturbed zones.

☐ Concerns:

Reviewed by: Sheila Charles & Jillian Edelmann

NHDOT Cultural Resources Staff

5/2/2018

Date:



West elevation, May 9, 2016



**US Army Corps
of Engineers®**
New England District

**U.S. Army Corps of Engineers
New Hampshire Programmatic General Permit (PGP)
Appendix B - Corps Secondary Impacts Checklist
(for inland wetland/waterway fill projects in New Hampshire)**

1. Attach any explanations to this checklist. Lack of information could delay a Corps permit determination.
2. All references to “work” include all work associated with the project construction and operation. Work includes filling, clearing, flooding, draining, excavation, dozing, stumping, etc.
3. See PGP, GC 5 regarding single and complete projects.
4. Contact the Corps at (978) 318-8832 with any questions.

	Yes	No
1. Impaired Waters		
1.1 Will any work occur within 1 mile upstream in the watershed of an impaired water? See http://des.nh.gov/organization/divisions/water/wmb/section401/impaired_waters.htm to determine if there is an impaired water in the vicinity of your work area.*		X
2. Wetlands	Yes	No
2.1 Are there are streams, brooks, rivers, ponds, or lakes within 200 feet of any proposed work?	X	
2.2 Are there proposed impacts to SAS, shellfish beds, special wetlands and vernal pools (see PGP, GC 26 and Appendix A)? Applicants may obtain information from the NH Department of Resources and Economic Development Natural Heritage Bureau (NHB) website, www.nhnaturalheritage.org , specifically the book Natural Community Systems of New Hampshire .		X
2.3 If wetland crossings are proposed, are they adequately designed to maintain hydrology, sediment transport & wildlife passage?	X	
2.4 Would the project remove part or all of a riparian buffer? (Riparian buffers are lands adjacent to streams where vegetation is strongly influenced by the presence of water. They are often thin lines of vegetation containing native grasses, flowers, shrubs and/or trees that line the stream banks. They are also called vegetated buffer zones.)	X	
2.5 The overall project site is more than 40 acres.		X
2.6 What is the size of the existing impervious surface area? (bridge area only)		840 ft ²
2.7 What is the size of the proposed impervious surface area? (bridge area only)		998 ft ²
2.8 What is the % of the impervious area (new and existing) to the overall project site?		19%
3. Wildlife	Yes	No
3.1 Has the NHB determined that there are known occurrences of rare species, exemplary natural communities, Federal and State threatened and endangered species and habitat, in the vicinity of the proposed project? (All projects require a NHB determination.)		X
3.2 Would work occur in any area identified as either “Highest Ranked Habitat in N.H.” or “Highest Ranked Habitat in Ecological Region”? (These areas are colored magenta and green, respectively, on NH Fish and Game’s map, “2010 Highest Ranked Wildlife Habitat by Ecological Condition.”) Map information can be found at: • PDF: www.wildlife.state.nh.us/Wildlife/Wildlife_Plan/highest_ranking_habitat.htm . • Data Mapper: www.granit.unh.edu . • GIS: www.granit.unh.edu/data/downloadfreedata/category/databycategory.html .	X	
3.3 Would the project impact more than 20 acres of an undeveloped land block (upland, wetland/waterway) on the entire project site and/or on an adjoining property(s)?		X
3.4 Does the project propose more than a 10-lot residential subdivision, or a commercial or industrial development?		X
3.5 Are stream crossings designed in accordance with the PGP, GC 21?	X	

4. Flooding/Floodplain Values	Yes	No
4.1 Is the proposed project within the 100-year floodplain of an adjacent river or stream?	X	
4.2 If 4.1 is yes, will compensatory flood storage be provided if the project results in a loss of flood storage?	-	X
5. Historic/Archaeological Resources		
If a minor or major impact project, has a copy of the Request for Project Review (RPR) Form (www.nh.gov/nhdhr/review) been sent to the NH Division of Historical Resources as required on Page 5 of the PGP?**		X

*Although this checklist utilizes state information, its submittal to the Corps is a Federal requirement.

** If project is not within Federal jurisdiction, coordination with NH DHR is not required under Federal law.



Southeast Wingwall and Channel



Downstream Channel



Northwest Wingwall and Channel



Upstream Channel



Beneath Existing Structure



Existing Structure Approach

CONSTRUCTION SEQUENCE

1. At normal to low flow, sandbag cofferdams will be setup down the center of the brook and around additional areas as necessary. The stream will be diverted to one side of the cofferdam.
2. The work zone will be dewatered or contained.
3. New wingwalls will be constructed and the east abutment will be widened to accommodate the deck widening.
4. Temporary scaffolding will be placed in the brook and the deck will be replaced.
5. Riprap will be placed in front of the abutments and wingwalls.
6. All dewatering devices will be removed and the site will be restored to its original quality.

Note: The Project will utilize BMP's from the Best Management Practices manual during all phases of construction.

Env-Wt 404 Criteria for Shoreline Protection

The rehabilitation of the bridge that carries Rte. 118 over Indian River proposes the placement of stone fill within areas under the jurisdiction of the NH Wetlands Bureau and the US Army Corps of Engineers. The stone fill will be located in the channel and along the bank of the proposed structure as shown on the plans.

Pursuant to PART Wt 404 Criteria for Shoreline Stabilization, the following addresses each codified section of the Administrative Rules:

Wt 404.01 Least Intrusive Method

The riverbank stabilization treatment proposed is the least intrusive construction method necessary to minimize the disruption to the existing shorelines. The stone treatment can be reasonably constructed utilizing general highway construction methods.

Wt 404.02 Diversion of Water

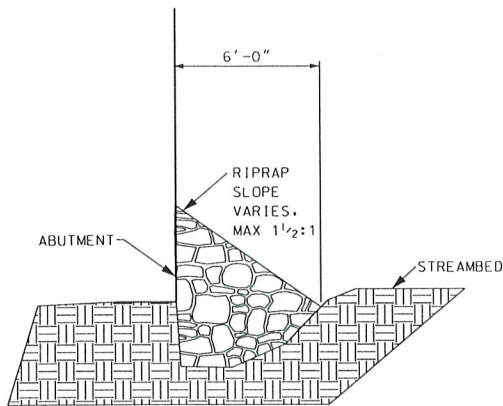
Proposed roadway drainage will allow storm water run-off to be diverted so that it will flow over vegetated areas, insofar as possible, prior to entering Indian River. This will minimize erosion of the shoreline.

Wt 404.03 Vegetative Stabilization

Natural vegetation will be left undisturbed to the maximum extent possible. The only locations being disturbed are the impacted areas on the plan for construction. All newly developed slopes and disturbed areas will have humus and seed applied for turf establishment, which will help stabilize the project area.

Wt 404.04 Rip-Rap

- (a) Stone fill, as proposed, is shown on the attached plans to protect the channel and bank as necessary. Stable embankments are necessary to maintain the structural integrity of the bridge during all flow conditions.
- (b) (1-5) The minimum and maximum stone size, the gradation, cross sections of the stone fill, proposed location, and other details have been provided on the attached plans. Bedding for the stone fill will consist of natural ground excavated to the proposed underside of the stone fill.
- (b) (6) Enclosed are plan sheets to sufficiently indicate the relationship of the project to fixed points of reference, abutting properties, and features of the natural shoreline.
- (b) (7) Stone fill is recommended for the limits shown on the attached plans to protect the banks from erosion during flood flows, from scour during all flows, and slopes greater than 2:1 have difficulty supporting vegetation.
- (c) This project is not located adjacent to a great pond or water body where the state holds fee simple ownership.
- (d) Stone fill is proposed to extend down to and adequately keyed into the channel bottom to prevent possible undermining of the slope.
- (e) The enclosed plan has been stamped by a professional engineer.

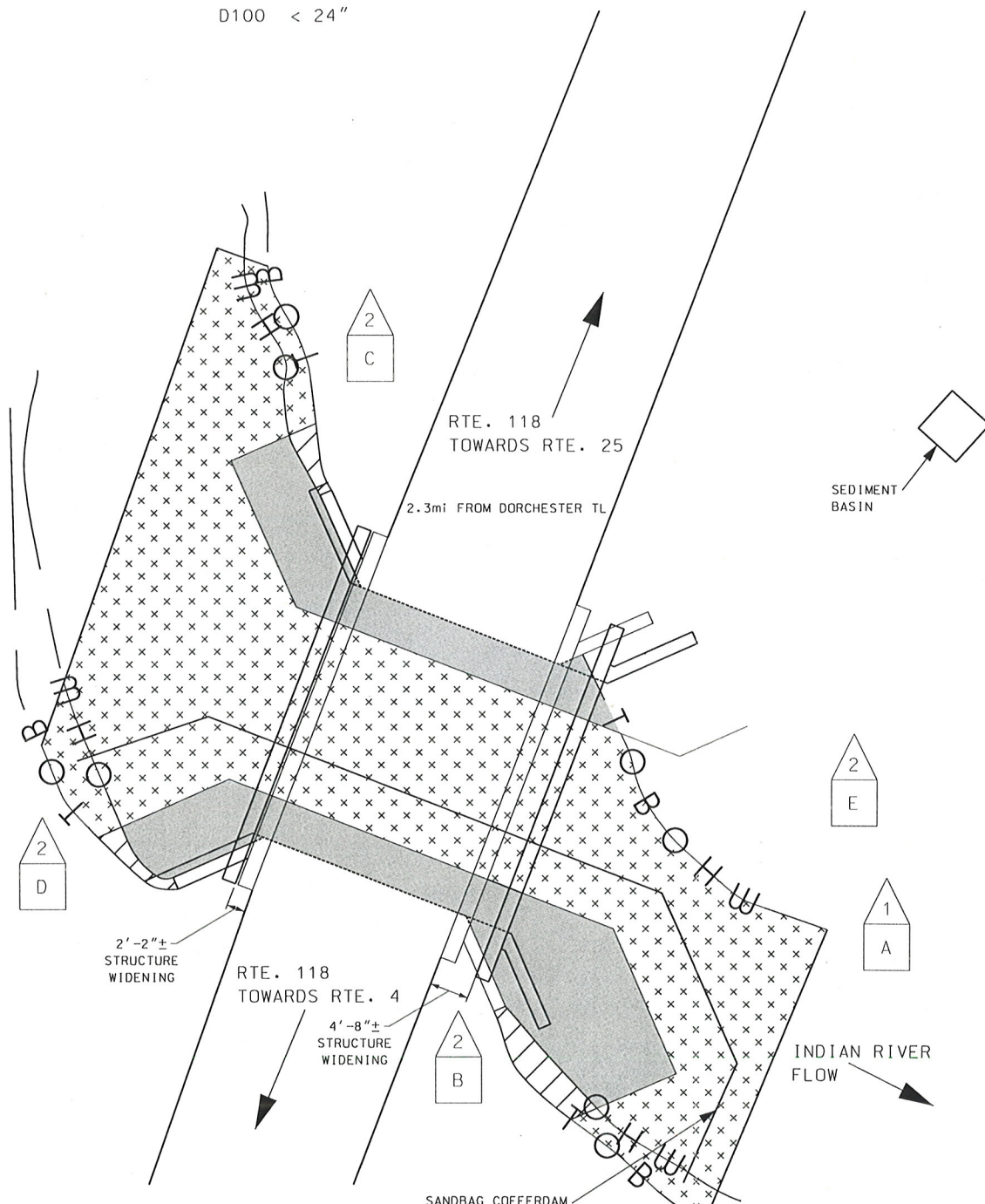


TYPICAL CROSS SECTION

NOT TO SCALE

RIPRAP GRADATION

D15 < 11"
D50 < 14"
D100 < 24"



WETLAND IMPACTS

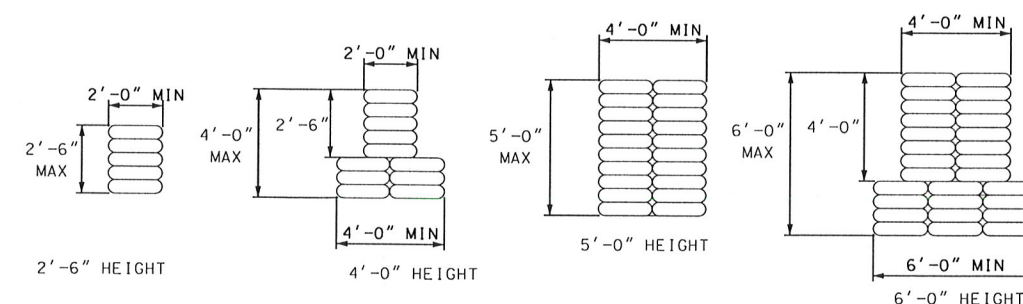
SCALE: 1" = 20'-0"



WETLAND CLASSIFICATION CODES	
R2UB1.2	RIVERINE, LOWER PERENNIAL, UNCONSOLIDATED BOTTOM, COBBLE GRAVEL, SAND
BANK	

LEGEND

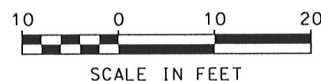
TYPE OF WETLAND IMPACT	SHADING/HATCHING	#	WETLAND DESIGNATION NUMBER
NEW HAMPSHIRE WETLANDS BUREAU (PERMANENT NON-WETLAND)		#	WETLAND IMPACT LOCATION
NEW HAMPSHIRE WETLANDS BUREAU & ARMY CORP OF ENGINEERS (PERMANENT WETLAND)		#	WETLAND MITIGATION AREA
TEMPORARY IMPACTS			MITIGATION



COFFERDAM DETAILS

NOT TO SCALE

WETLANDS DELINEATED BY MATT URBAN ON 7/2015



SCALE IN FEET

STATE OF NEW HAMPSHIRE									
DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE MAINTENANCE									
TOWN		CANAAN		BRIDGE NO.		177/123		STATE PROJECT 40493	
LOCATION		NH RTE. 118 OVER INDIAN RIVER							
WETLAND IMPACTS								BRIDGE SHEET	
REVISIONS AFTER PROPOSAL				BY	DATE	BY		DATE	1 OF 2
				DESIGNED	ANW	8/19/15	CHECKED		FILE NUMBER CANAAN 177/123
				DRAWN	ANW	8/19/15	CHECKED		
				QUANTITIES			CHECKED		
				ISSUE DATE		FISCAL YEAR	CREW	SHEET NO.	TOTAL SHEETS
				REV. DATE		2016	04	1	3

SHEET SCALE
AS NOTED

WETLAND IMPACT SUMMARY											
WETLAND NUMBER	WETLAND CLASSIFICATION	LOCATION	AREA IMPACTS						LINEAR STREAM IMPACTS FOR MITIGATION		
			PERMANENT				TEMPORARY		PERMANENT		
			N.H.W.B. (NON WETLAND)		N.H.W.B. & A.C.O.E. (WETLAND)				BANK LEFT	BANK RIGHT	CHANNEL
			SF	LF	SF	LF	SF	LF	LF	LF	LF
1	R2UB1,2	A			953	144	2716	113			
2	BANK	B	53	16			61	34			
2	BANK	C	18	8			60	22			
2	BANK	D	18	10			73	20			
2	BANK	E		10				36			
		F									
		G									
		H									
		I									
		J									
		K									
		L									
		TOTAL	89	44	953	144	2910	225			
									0	0	0

PERMANENT IMPACTS: 1042 SF

TEMPORARY IMPACTS: 2910 SF

TOTAL IMPACTS: 3952 SF

SUBTOTALS		PERMANENT				TEMPORARY	
		N.H.W.B. (NON WETLAND)		N.H.W.B. & A.C.O.E. (WETLAND)			
CLASS	DESCRIPTION	SF	LF	SF	LF	SF	LF
R2UB1,2	RIVERINE	0	0	953	144	2716	113
BANK	BANK	89	44	0	0	194	112
		0	0	0	0	0	0
		0	0	0	0	0	0
		0	0	0	0	0	0

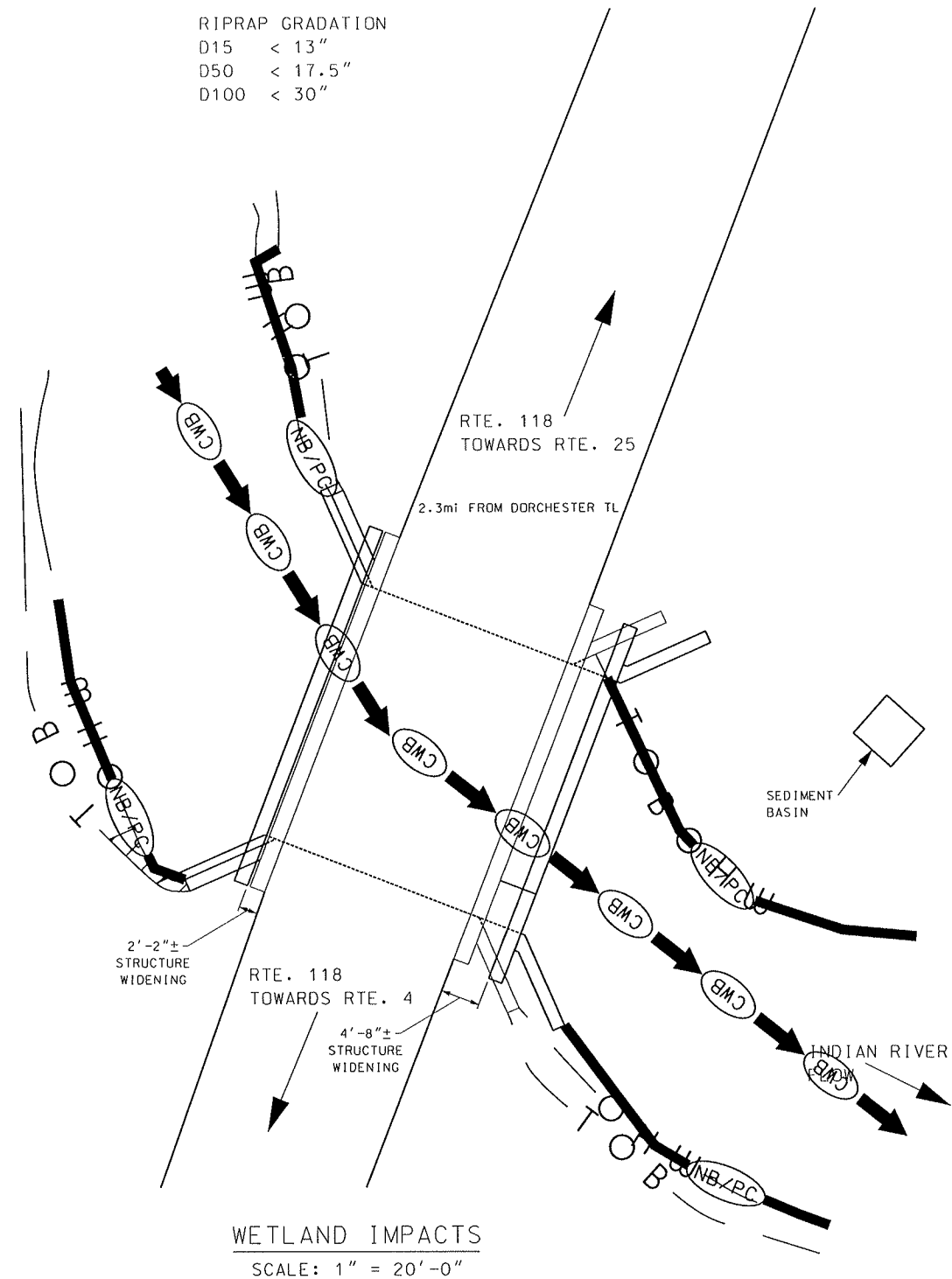
* MITIGATION FOR LENGTHS OF
STREAM AND BANK IMPACTS
WHERE EXTENDING THE BRIDGE
2'-2 UPSTREAM AND
4'-8 DOWNSTREAM

* MITIGATION NOT REQUIRED
FOR REMAINING LINEAR FEET
OF IMPACTS TO STREAM CHANNEL
AND BANK AS THE IMPACTS ARE
NEEDS FOR THE PROTECTION OF
EXISTING INFRASTRUCTURE
302.03(C)(2)C

SHEET SCALE

AS NOTED

STATE OF NEW HAMPSHIRE									
DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE MAINTENANCE									
TOWN	CANAAN	BRIDGE NO.	177/123	STATE PROJECT	40493				
LOCATION	NH RTE. 118 OVER INDIAN RIVER								
WETLAND IMPACTS								BRIDGE SHEET	
	REVISIONS AFTER PROPOSAL		BY	DATE		BY	DATE	2	OF 3
		DESIGNED	ANW	8/19/15	CHECKED			FILE NUMBER CANAAN 177/123	
		DRAWN	DBL	3/21/18	CHECKED				
		QUANTITIES			CHECKED				
		ISSUE DATE		FISCAL YEAR	CREW	SHEET NO.	TOTAL SHEETS		
		REV. DATE		2016	04	2	3		



EROSION CONTROL PLAN LEGEND	
	PERIMETER CONTROL
	SILT FENCE EROSION CONTROL MIX BERM EROSION CONTROL MIX SOX TURBIDITY CURTAIN SHEET PILE COFFER DAM
	NATURAL BUFFER/PERIMETER CONTROL
	SILT FENCE EROSION CONTROL MIX BERM EROSION CONTROL MIX SOX TURBIDITY CURTAIN SHEET PILE COFFER DAM
	CHANNEL PROTECTION
	STONE CHECK DAMS STRAW WATTLES CHANNEL MATTING CLASS D EROSION STONE CLASS C STONE
	CLEAN WATER BYPASS
	PUMP THROUGH PIPE DRAIN THROUGH PIPE OR CHANNEL

STATE OF NEW HAMPSHIRE											
DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE MAINTENANCE											
TOWN		CANAAN		BRIDGE NO.		177/123		STATE PROJECT		40493	
LOCATION		NH RTE. 118 OVER INDIAN RIVER									
EROSION CONTROL PLANS										BRIDGE SHEET	
REVISIONS AFTER PROPOSAL				BY		DATE		BY		DATE	
				DESIGNED		ANW 8/19/15		CHECKED			
				DRAWN		DBL 3/21/18		CHECKED			
				QUANTITIES				CHECKED			
SHEET SCALE				ISSUE DATE				FISCAL YEAR		CREW	
AS NOTED				REV. DATE				2016		04	
								SHEET NO.		3	
										TOTAL SHEETS	
										3	